RESEARCH ARTICLE

WILEY

Corporate governance, Shari'ah governance and financial flexibility: Evidence from the MENA region

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Abstract

This article investigates the relationship between corporate governance structures and financial flexibility for conventional and Islamic banks in the Middle East and North Africa (MENA) region. We construct a novel financial flexibility index (FFI) for the banking sector and examine the impact of the Shari'ah supervisory board (SSB), board size, and risk governance on financial flexibility. We find that board size and risk governance significantly affect banks' financial flexibility for Islamic and conventional banks. However, Shari'ah governance rules determine how that relationship is manifested in Islamic banks. We show that SSB size and busy SSBs enhance Islamic banks' financial flexibility. Our results show that Western corporate governance structures may lead to suboptimal financial flexibility. Banking policies should re-evaluate the impact of one-size-fits-all approaches to corporate governance while promoting 'soft policies' to banking regulation that are value-enhancing for the banking sector.

KEYWORDS

corporate governance, financial flexibility, Islamic banking, MENA region, Shari'ah governance

1 | INTRODUCTION

Financial flexibility refers to a firm's ability to undertake profit-maximising projects and respond efficiently to changes in cash flows (Bonaimé et al., 2013). In a perfectly frictionless world, firms can continuously adjust their capital structure to fund positive net present value projects and avoid financial distress. However, firms rarely operate in a frictionless world, so the ability to adjust their financial structures in response to unexpected drops in cash flows and increased needs for investments is crucial. In a seminal paper by Graham and Harvey (2001), Chief Financial Officers note that financial flexibility is the most important determinant of capital structure and financial decisions. Billett and Garfinkel (2004) show that banks with higher flexibility have higher values, as proxied by market-to-book ratios. Recently, Fahlenbrach et al. (2021) find that due to the COVID-19 shock, firms with high financial flexibility suffer less from stock price drops than those with low financial flexibility.

Even though corporate governance mechanisms are identified as an important player in financial flexibility components[1] (e.g., capital structure, risk policies, and cost of accessing external funds), researchers do not pay

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[1]In the context of the effect of corporate governance and initial public offerings on the financial flexibility of listed companies, Schoubben and van Hulle (2011) show that stock listing leads to more flexibility in debt financing.

much attention to the relationship between corporate governance and banks' financial flexibility. In a recent paper on the effect of corporate governance on banks' cost of debt, Trinh et al. (2020) show that conventional banks with busy directors have a lower cost of debt than Islamic banks. Equally, Wen et al. (2002) show that managers tend to assign lower financial leverage when monitored by strong corporate governance from the board. A limited number of studies (e.g., Caton et al., 2016; Islam, 2023) show that strong corporate governance enhances financial flexibility. However, to date, no study has investigated the impact of corporate governance structures on conventional and Islamic banks' financial flexibility. Given the importance of financial flexibility on capital structure, it is surprising that there is only one study on the impact of financial flexibility on conventional banks in the United States. Despite the noticeable surge in the Islamic banking industry, there is no study investigating the Islamic banks' financial flexibilities.[2] Islamic banks offer Shari'ah-compliant financial contracts and have an additional board governance layer, the Shari'ah supervisory board (SSB). Islamic banks' activities must comply with Shari'ah principles, creating more restrictions on these banks and their governance activities. We aim to fill this gap in the literature.

This article contributes to three strands of the literature. First, to our knowledge, this is the first paper investigating the impact of corporate governance mechanisms on banks' financial flexibility. Previous literature (e.g., Abdelbadie & Salama, 2019; Adams & Mehran, 2012; Brogi & Lagasio, 2022; Coles et al., 2008; Dittmar & Mahrt-Smith, 2007; Elamer et al., 2020) investigates board structure influences on a number of firms financial policies, yet none of these studies investigates the impact on banks' financial flexibility. Second, the existing literature employs limited governance mechanisms (see Caton et al., 2016; Islam, 2023). Our study contributes to the literature by employing a broader set of governance mechanisms, including the board of directors, risk governance, and SSB as an additional governance layer, at Islamic banks. Third, we contribute to the

literature that compares Islamic and conventional banks (see, for example, Abedifar et al., 2013; Abdelsalam et al., 2016; Albaity et al., 2021; Aljughaiman & Salama, 2019; Beck et al., 2013; Caporale & Helmi, 2018; Trinh et al., 2020).

We apply a multifaceted modelling approach to financial flexibility, corporate governance, and Shari'ah governance. First, we construct a novel measure of financial flexibility for the banking sector using two main banking properties: funding and liquidity positions relative to targeted ratios. Banks with more stable funding sources and liquid assets tend to be more financially flexible. Second, based on the main board of directors advising and monitoring roles, we assume that the board of directors composition and the SSB's size influence the bank's financial flexibility position. Corporate governance mechanisms are crucial in shaping the bank's financial policies and risk strategies. High risk-taking is hypothesised to reduce financial flexibility. Higher monitoring power is hypothesised to strengthen financial flexibility. Overall, we expect that good corporate governance structures will improve financial flexibility.

Third, we study the effect of corporate governance structures on financial flexibility separately for conventional and Islamic banks. We hypothesise that the additional monitoring mechanisms for Islamic banks are associated with more financial flexibility. Fourth, we construct a unique sample of conventional and Islamic banks in the Middle East and North Africa (MENA) region. MENA countries (i) have the highest concentration of IBs in the world. Also, (ii) La Porta et al. (1997) show that increases in asymmetric information and contracting problems are negatively associated with capital structure and investment decisions. Thus, institutions in the MENA region may suffer from limited financial flexibility due to higher levels of asymmetric information. Relatedly, Otero et al. (2020) recently show that banking efficiency in MENA countries is positively related to economic performance but negatively related to bank concentration and market share.

We show that corporate governance significantly affects banks' financial flexibility. The effect is different for conventional and Islamic banks. While board size positively affects conventional banks' financial flexibility, it negatively affects that of Islamic banks. Risk governance mechanisms overall enhance conventional and Islamic banks' financial flexibility. Finally, SSB size and busy SSBs improve the Islamic Banks' financial flexibility position. Overall, Islamic banks' main characteristics explain our findings: Shari'ah compliance risk and lack of protection for stakeholders' rights. We confirm that SSBs, as an additional governance layer, play an essential role in determining Islamic banks' financial flexibility. A larger SSB with more expert members brings

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[2]Corporate governance practices and conducting business in the Muslim world have received increased attention in recent academic literature (see Berger et al., 2015; Kabasakal et al., 2012; and Richardson, 2014 for a set of relevant studies). Islamic banks' growth rate is 50% faster than the overall banking sector, and the average annual growth rate was 17.6% from 2008 to 2012. Also, the financial assets of Islamic banks reached USD 2.19 trillion in 2018 and USD 3 trillion in 2020 (IFSB, 2019). Relatedly, Caporale and Helmi (2018) show how credit contributes to GDP growth in countries with Islamic banks, and Asutay and Mohd Sidek (2020) show that political commitment is necessary for a robust Islamic banking system.

more knowledge and experience to the board, improving the quality of monitoring processes.

Our results provide insights into the role of corporate governance structures in determining financial flexibility for conventional and Islamic banks. Board effectiveness and risk governance practices have financial flexibility implications. Conventional banks should pay more attention to the additional governance mechanisms introduced in Islamic banks with the existence of SSBs. Likewise, Islamic banks should pay more attention to SSB's structure and functions. Finally, regulators tend to focus on 'hard policies', such as increasing capital and liquidity requirements for banks. We show that 'soft policies', such as targeting banks' governance mechanisms, will enhance the banking sector's resilience. This finding is in line with the recent findings by Hoque and Liu (2021) regarding the impact of bank regulation on the risk of Islamic and conventional banks, indicating that more targeted regulations towards Islamic banks are needed to support the Islamic banking industry.

The rest of this article is organised as follows: Section 2 develops the hypotheses. Section 3 presents the data and methodology. The results and empirical analysis are presented in Section 4. Section 5 concludes.

2 | LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

We begin this section by discussing the role of corporate governance in the banking industry. We then discuss the unique nature of Islamic banks and Shari'ah governance's role as an additional monitoring and advisory mechanism for Islamic banks. We then consider the role of the board of directors' effectiveness on conventional and Islamic banks' financial flexibility. We finally discuss the role of risk governance in banks' financial flexibility and the role of Islamic risk mechanisms in the financial flexibility of Islamic banks.

2.1 | Corporate governance and Shari'ah governance

Banks play a crucial role in the financial system and are also extensively regulated due to their high leverage and potential for contagion within the banking industry and the real economy. It is, therefore, surprising that there is little research on the corporate governance of banks. Elyasiani & Zhang (2015, p. 239) suggest that 'the effects of bank boards on banking firm performance and risk may be dissimilar to their effects on nonfinancial firms and, hence, worthy of special attention'. Further,

the banking industry is subject to the conventional agency problems that firms are exposed to and its unique agency costs derived from managers' duty to protect the interests of different capital providers (Safieddine, 2009). Indeed, banks are susceptible to higher agency costs due to a lack of transparency in their contracts, higher leverage, and higher information asymmetry between managers and shareholders (Morgan, 2002).

Unlike conventional banks, Islamic banks' governance is linked to Islamic principles. Although similar to the Anglo-American model, governance in Islam is perceived as more robust with the additional layer of monitoring in religious or ethical boards—the SSB (Abdelsalam et al., 2016; 2014; Mollah & Zaman, 2015). In Islamic banks, the agents, boards, and other committees must adhere to the Islamic principles of *Shari'ah* when fulfilling their missions to maximise shareholder wealth.[3] Also, any divergence by Islamic bank agents from placing all of their supplied funds in *Shari'ah*-compliant investments creates an additional source of problems for them (Safieddine, 2009). These agency conflicts increase further due to the different operations of Islamic banks involving various stakeholders and contract structures, thus causing the managers to use their discretion when using the various stakeholder funds. Nawaz et al. (2020) show that Shari'ah governance positively affects bank performance.

For example, one of the central agency problems Islamic banks face is related to investment account contracts. Investment accounts in Islamic banks are based on profit-sharing and loss-bearing (*Mudarabah*) or profit-and-loss-sharing (*Musharaka*) contracts because of the prohibition on paying interest as a return (*riba*). This provides Islamic banks with more legal liberties, whereby they engage in investments and share the profits with investor account holders (IAHs) based on the overall profits they achieve (Abdelsalam et al., 2016). As Safieddine (2009) shows, the latter increases the possibility of manipulating IAH returns. *Mudarabah* contracts are naturally prone to moral hazard problems as managers increase their risk-taking behaviour, while losses are often borne only by the IAHs (Aggarwal & Yousef, 2000).

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[3]According to Shari'ah principles, the charging of interest payments (Riba) and speculation are not allowed, and the financing of specific illicit activities is prohibited. Furthermore, Shari'ah principles rely on the idea that profit and loss must be shared; thus, the risk would be shared. Also, it requires all financial transactions to be backed by a real economic transaction that involves a tangible asset. Relatedly, Siddique (2020) investigates the role of Riba principles in credit-based monetary systems as opposed to commodity-based monetary systems.

2.2 | Board of directors' effectiveness and financial flexibility

As Denis (2011) and Gamba and Triantis (2008) show, firms improve their financial flexibility by following conservative risk strategies when determining financial policies (i.e., policies related to funding and liquidity) and having strong monitoring mechanisms.[4] In the banking sector, funding and liquidity risk-taking policies influence a bank's financial flexibility. Cornett et al. (2011) show how stable funding increases a bank's ability to operate and encounter risks even during crises. Similarly, the Basel Committee on Banking Supervision (2014) and the Islamic Financial Services Board (2015) ensure that effective liquidity risk management can increase a bank's resilience. Consequently, if managers act against the established conservative funding and liquidity policies, banks' financial flexibility might be reduced.

Building on agency theory, an extensive body of literature states that effective corporate governance reduces agency costs (Fama, 1980; Shleifer & Vishny, 1986; Williamson, 1988). Notably, the board is the '*professional referee*' (Fama, 1980, p. 293), serving as a monitoring agent with a legal and moral obligation to align management and shareholder interests. La Porta et al. (1997) show that an effective board may prevent managers from exploiting their firm's financial resources and maintaining a good financial reserve position. A strong monitoring governance mechanism prevents managers from exploiting firms' financial resources.

Further, the board of directors is crucial in affecting risk strategies and monitoring roles. Yun (2008) shows how boards influence risk strategies, suggesting that stronger corporate governance leads to more efficient financial policies (i.e., more liquid asset reserves). Jiang et al. (2023) show that firms with weak corporate governance mechanisms tend to have fewer cash holdings. Dittmar and Mahrt-Smith (2007) argue that a slack monitoring network within banks due to weak corporate governance mechanisms may give managers more opportunities to take personal benefits using free cash flows. Islam (2023) investigates the influence of corporate governance on firm financial flexibility using a sample of Chinese-listed firms from 2007 to 2020. He finds that effective corporate governance enhances firms' financial flexibility. Consistent with the above, we propose that a more effective board improves

banks' risk-taking policies (advising role) and monitoring system, increasing their financial flexibility.

The board is responsible for a bank's soundness and safety through its two fundamental roles: monitoring and advising. Further, the board is the body that is ultimately accountable for liquidity risk management at a bank. The theoretical and empirical literature recommends that these two board roles be made more efficient by adjusting the board's size and composition (Adams & Ferreira, 2007; Coles et al., 2008; Linck et al., 2008; Raheja, 2005).

A large body of literature has shown that a higher number of board members with a greater proportion of outside directors can lead to much stricter controls and better advice on a bank's management, thus improving its effectiveness (see Boone et al., 2007; Singh et al., 2018). Adams and Mehran (2012) show that board size positively affects firm performance. In addition, Coles et al. (2008) find that a larger board with a larger proportion of independent board members is positively associated with firm value. Dittmar and Mahrt-Smith (2007) find that larger boards are associated with higher cash holdings. Based on the above, we hypothesise that a larger board size with a higher proportion of outside directors improves the board's effectiveness in conventional banks and thus enhances the bank's financial flexibility.

> **Hypothesis 1a.** A larger board size with a higher proportion of outside directors is associated with greater financial flexibility for conventional banks.

2.3 | Board of directors' effectiveness and financial flexibility in Islamic banks

Coles et al. (2008) challenge the direction of the established relationship between board effectiveness and firm value. According to the resource dependence theory, the firm needs to recognise the environmental aspects that can affect its success and adapt to such an environment (Pfeffer, 1972; Pfeffer & Salancik, 2003). Therefore, based on this theory, the board of directors' impact on Islamic banks' financial flexibility may be determined differently to match the external interdependencies (e.g., compliance with Shari'ah principles) to survive. For example, a larger board with more outside directors in Islamic banks is often associated with less board effectiveness (Mollah, Skully, & Liljeblom, 2017; Mollah & Zaman, 2015). Thus, we anticipate that the influence of the board of directors' size and independence on Islamic banks' financial flexibility differs from that of conventional banks. We expect this relationship for several reasons.

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[4]Conservative risk strategies can be identified by having more cash reserves and/or stable funding than the industry or country average or by having clear optimal targets in financial policies. In other words, the conservative risk strategies in this article stand for conservative financial systems.

First, Islamic banks' boards, in addition to shareholder and regulatory requirements, must act under *Shari'ah* requirements. Non-*Shari'ah*-compliant Islamic banks are exposed to credit, legal, reputational, and market risks that are associated with severe issues such as withdrawal of funds, higher costs of attracting deposits, direct and indirect financial losses, liquidity issues, bank runs, bank failures, financial instability, and industry smearing.[5] However, only a small portion of Islamic banks have members with knowledge of *Shari'ah* principles on board. Islamic banks tend to rely on the *Shari'ah* boards to support their reputation and ensure their clients' trust. Safieddine (2009) finds that 85% of surveyed banks consider SSB decisions mandatory. Adams and Mehran (2012) show that outsider directors lacking firm-specific knowledge might be associated with costs. Therefore, a larger board comprising a higher number of outside directors with insufficient knowledge of Islamic finance might be costly, making the monitoring and advisory processes weaker.

Second, Islamic banks' primary source of funds comes from investment account holders (IAHs), who are typically risk-averse (Hilary & Hui, 2009). However, IAHs usually have no representatives protecting their interests on the board, leading to a conflict of interest between the board members and the IAHs, with the latter bearing the risk of the board's investment decisions. Therefore, a large board with a higher fraction of outside directors in an Islamic bank is often associated with greater risk-taking behaviour (Mollah, Hassan, et al., 2017).

Based on the above, we conjecture the following hypothesis:

> **Hypothesis 1b.** There is a significant difference in the influence of board size and the proportion of independent directors on the financial flexibility of Islamic and conventional banks.

2.4 | Risk governance and financial flexibility

A growing part of the academic literature on corporate governance emphasises a dedicated risk committee's role in overseeing the firm's overall risk-taking behaviour. In particular, for the banking industry, Stulz (2014) shows that a well-governed bank takes an amount of risk that aligns with its wealth maximisation objective. Therefore, the role of the risk committee is not to reduce risk per se;

instead, risk management refers to ensuring that the level of risk a bank takes is in line with its risk appetite. Further, Ellul and Yerramilli (2013) show that independent risk management can reduce risk-taking and maximise shareholder wealth. In the context of Islamic banks, Aljughaiman and Salama (2019) show that risk committees reduce conventional and Islamic bank risk-taking in the post-crisis period. In line with the above, we hypothesise that a stronger risk governance mechanism by creating a dedicated risk committee improves banks' financial flexibility. Therefore, the following hypothesis is suggested:

> **Hypothesis 2.** The presence of a stand-alone risk committee is positively related to a higher degree of financial flexibility in banks.

2.5 | Shari'ah governance and financial flexibility in Islamic banks

Evidence shows that compliance with *Shari'ah* principles is associated with higher profitability and reduced risk-taking. Abedifar et al. (2013) and Beck et al. (2013) show that Islamic banks have higher capital levels than conventional banks. Olson and Zoubi (2008) show that Islamic banks' liquidity is also higher to compensate for their limited access to the debt market. Therefore, Islamic banks' financial flexibility position is expected to be influenced by Shari'ah practices. For example, *Shari'ah* principles restrict the types of risky investments Islamic banks are allowed to undertake, which explains the Islamic banks' higher capital positions. Also, *Shari'ah*-compliant restrictions on external financial markets have led Islamic banks to hold more liquid assets.

To guarantee that Islamic banks are fully compliant with *Shari'ah*, they are obliged to construct an additional layer of governance, the SSB, in addition to their boards. The SSB, therefore, plays a critical role in mitigating and controlling a bank's risk of *Shari'ah* non-compliance. Consequently, the SSB's monitoring role is expected to influence Islamic banks' financial flexibility positions. Mollah and Zaman (2015) compare Islamic and conventional banks and find that SSB's supervisory role improves Islamic banks' performance. Safiullah et al. (2022) show that effective SSB governance improves bank liquidity. Therefore, we hypothesise that the SSB provides a valuable mechanism for ensuring management compliance with *Shari'ah*, which assists in maintaining conservative financial policies. This improved compliance increases stakeholder trust, leading to lower insolvency risk, and is eventually associated with a more robust

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[5]In a recent paper, Albaity et al. (2021) show that Islamic banks are less financially stable than conventional banks.

financial flexibility position. The following hypothesis will be tested:

> **Hypothesis 3.** There is a positive relationship between SSBs′ effectiveness and Islamic banks′ financial flexibility.

We hypothesise that Shari'ah governance effectiveness is related to board size, the educational background, and the corporate governance experience of the board member. In particular, the Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI), the body responsible for maintaining and promoting *Shari'ah* standards, states that the SSB should include at least three scholar members recommended by a board. Therefore, increased independence can be achieved by having a larger SSB. The SSB's role includes making decisions regarding Shari'ah screening of the bank's loan quality, policies, and investment strategies, which requires a deep understanding of Islamic law, modern banking, and legal issues. Therefore, a larger SSB size will increase the SSB background diversity, enhancing juristic Shari'ah decision-making. Thus, the banks′ compliance with Shari'ah principles may enhance and influence the Islamic banks′ financial flexibility position. Mollah and Zaman (2015) find that a larger SSB is related to higher performance. Safiullah and Shamsuddin (2018) also find that operational and insolvency risks decrease with larger SSB sizes.

3 | DATA AND METHODS

In this section, we describe our sample and the estimation of the main and control variables. Finally, we present the main regression model and discuss alternative variable specifications and robustness models.

3.1 | Data

We focus on conventional and Islamic banks operating in the MENA region. Although Islamic banks have expanded beyond Islamic countries, the majority are based in the MENA region, where Islam is a dominant religion (Abdelsalam et al., 2016). Also, (i) the growth of Islamic banks in that region is high compared to other regions, and (ii) Islamic banks in this region hold many of the assets among Islamic banks worldwide.

There are 360 banks—94 Islamic banks and 266 conventional banks—operating in 22 MENA countries between 2009 and 2020. We require a bank to have full annual reports published for the financial year ending on the 31st of December. Following prior literature (Abdelsalam et al., 2016; Abedifar et al., 2013; Beck et al., 2013; Mollah, Skully, & Liljeblom, 2017), we filtered the sample further based on the following three criteria: (1) a country is required to have both types of banks; (2) only full-fledged commercial banks are used. Therefore, full investment and conventional banks with Islamic windows were dropped from the sample;[6] (3) and non-commercial, unlisted banks and banks with less than two consecutive years of data were eliminated. The final sample consists of 65 listed banks (760 bank-year observations).

Table 1 presents the sample distribution by country and bank, with 28 Islamic banks (328 observations) and 37 conventional banks (432 observations). The highest proportions of Islamic banks are in Bahrain and Kuwait, while Jordan reports the highest concentration of conventional banks.

Consolidated financial data (in US dollars) were obtained from BankScope and Bloomberg. Governance-level data were manually collected from the banks′ annual reports. Country-level variables (macroeconomic and governance indicators) were retrieved from the World Bank website.[7]

3.2 | Estimation of variables

3.2.1 | Financial flexibility index

One novelty of this article is constructing a financial flexibility index (FFI) for Islamic and conventional banks. In this sub-section, we discuss how the FFI is constructed and provide explanatory data analysis results to check for the index's validity.

Financial flexibility is not directly observable; it refers to a firm's desire to maintain this position (Graham & Harvey, 2001). Also, one-dimensional financial flexibility measures may be misleading as they may be affected by a measure's life cycle (see, for example, Gamba & Triantis, 2008). For example, constrained firms hold more cash because of their restrictions on accessing external funding. In contrast, mature companies consider cash holdings a costly strategy, as they can obtain external financing at a lower cost. Therefore, in this study, we construct an FFI using three proxies to capture a bank's

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[6]CBs with Islamic windows refer to banks that provide products compliant with *Shari'ah* (Beck et al., 2013). We exclude CBs with Islamic windows, as they do not provide separate financial data that allows us to distinguish between these windows and full CBs.

[7]The data supporting this study's findings is available from BankScope, Bloomberg, banks′ annual reports, and the World Bank. Restrictions apply to the availability of these data, which were used under licence for this study.

TABLE 1 Sample distributions.

Country	Observations (IBs)	Observations (CBs)	Observations (full sample)	IBs percentage	CBs percentage	Full sample percentage
Bahrain	60	24	84	7.89%	3.16%	11.05%
Egypt	24	36	60	3.16%	4.74%	7.89%
Jordan	24	120	144	3.16%	15.79%	18.95%
Kuwait	60	48	108	7.89%	6.32%	14.21%
Lebanon	0	48	48	0.00%	6.32%	6.32%
Oman	16	36	52	2.11%	4.74%	6.84%
Palestine	24	12	36	3.16%	1.58%	4.74%
Qatar	36	60	96	4.74%	7.89%	12.63%
Saudi Arabia	48	0	48	6.32%	0.00%	6.32%
Tunisia	0	24	24	0.00%	3.16%	3.16%
UAE	36	24	60	4.74%	3.16%	7.89%
Total	328	432	760	43.74%	56.84%	100.00%
Number of banks	28	37	65			

Note: The final sample employs an unbalanced panel data of 65 listed banks (760 bank year-observations), operating in 11 MENA countries.

financial flexibility: the core funding ratio, the liquid assets ratio, and insolvency risk. We follow the literature in choosing our financial flexibility proxies (see Denis, 2011; Yung et al., 2015; Zona, 2012).

Furthermore, these proxies' selection is based on their intensive use by international regulators (e.g., core funding and liquid assets ratios) and their connotations to CAMEL framework categories.[8] Most regulators' stability reports (i.e., IFSB, 2019) take liquidity and stable funding ratios as financial stability indicators. In Table 2, we show how each one of these proxies is estimated. Below, we provide a rationale for the selection of the three proxies.

The core funding ratio refers to the amount of available stable funding (BCBS, 2014).[9] Previous literature documents the importance of stable funding for banks' abilities to deal with unexpected losses and take advantage of investment opportunities (see Ivashina & Scharfstein, 2010). Unlike the short-term wholesale market, core funding is less vulnerable to market liquidity shocks. Therefore, we consider the stability of a bank's funding structure as a proxy for financial flexibility. Generally, the higher the core funding ratio, the greater the bank's financial flexibility. Also, Islamic banks have a different funding structure, relying on profit-sharing investment accounts (PSIAs) and

demand deposits. Abedifar et al. (2013), amongst others, show that PSIAs provide more flexibility for Islamic banks since the risk is borne by the investors' interest (see also Arshed & Kalim, 2020). Thus, PSIAs also offer more stability for Islamic banks, which increases their financial flexibility. Consistent with the Basel Committee on Banking Supervision (2014) and the Islamic Financial Services Board (2015) recommendations, we estimate the core stable funding ratio using total customer deposits (demand and term) × 95% plus Tier 1 capital plus debt with long-term maturity scaled by total assets.[10]

The liquid assets ratio refers to the bank's cash and cash equivalents used to encounter unexpected earnings shocks and meet investment opportunities (see Bates et al., 2009; Denis, 2011 & Zona, 2012). The liquid assets ratio measures banks' liquidity, which can be used as a buffer in economic downturns (see Billett & Garfinkel, 2004). Therefore, the higher this ratio, the greater a bank's financial flexibility.

Insolvency risk refers to the risk that the bank may be unable to service its debt. Consistent with the banking literature, we use the banks' Z-score to measure insolvency risk.[11] The Z-score is inversely related to the probability

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[8]CAMEL framework is used to assess the bank's financial position in terms of capital adequacy (i.e., capital risk), assets quality (i.e., credit risk), management (i.e., expense management), earnings (i.e., profitability), and liquidity (i.e., liquidity risk).

[9]The Basel Committee on Banking Supervision (BCBS) suggests that retail (demand and term) deposits, capital, and debt with a 1-year maturity or more be treated as stable funding.

[10]Both BCBS (2014) and IFSB (2015) give an ASF (available stable factor) of 100% for regulatory capital and liabilities with more than one-year maturity. Also, they give a 95% ASF for consumer deposits and unrestricted IAH.

[11]Z-score is captured using the natural logarithm to control for any outliers and high skewness in the distribution. The standard deviation of ROA is measured using three consecutive years (current plus two previous years).

TABLE 2 Financial flexibility index (FFI) measure.

Financial flexibility proxies	Measurement	Judgment
Stable (core) funding to assets (SFA) ratio	SFA = ([Core deposits × 95%] + Core capital + Debt with maturity longer than one year)/Total assets	Is a bank's SFA > the mean average of the SFA for the full sample at time t in each country? A value of 1 if yes; 0 otherwise.
Liquid assets (LA) ratio	LA = Cash and cash equivalent/total assets	Is a bank's LA > the mean average of the LA for the full sample at time t in each country? A value of 1 if yes; 0 otherwise.
Insolvency risks (Z-score)	Z-score = Return on average assets + Capital assets ratio/standard deviation of return of average assets	Is a bank's Z-score > the mean average of the Z-score for the full sample at time t in each country? A value of 1 if yes; 0 otherwise.
Capital adequacy ratio (Tier 1 ratio)	Tier 1 = Tier 1 capital as percentage of risk-weighted assets and of off-balance sheet risks	Is a bank's Tier 1 ratio > the mean average of the Tier1 for the full sample at time t in each country? A value of 1 if yes; 0 otherwise.

Note: FFI is only include the first three proxies of financial flexibility. For robustness check, we measure our financial flexibility differently by adding the five rest proxies.

of banks' insolvencies. Banks become insolvent if the value of their assets drops below their debt value. A higher Z-score implies a lower insolvency risk for banks. We calculate the Z-score as the expected return on assets $E(ROA)_{it}$ plus the equity capital to total assets ratio $(CAR)_{it}$ divided by the standard deviation of return on assets $\sigma(ROA)_{it}$. The list of variables used in constructing the FFI is presented in Table 2.

To measure financial flexibility, we need to compare the target towards certain policies with the actual achievement during that period. For example, Gamba and Triantis (2008) argue that a firm's financial flexibility position could be captured by taking the deviation between a firm's targeted leverage level and its actual leverage level (debt capacity). Therefore, we construct the FFI as follows: We take the country j average of each proxy at each time t and compare it with the bank i value of each proxy to capture the financial flexibility level. We use the country and time averages to mitigate any bias affecting this study. We then create dummy variables for each of the three financial flexibility proxies (see Table 2). Each dummy variable has a value of 1 if a bank's proxy has a score above the country average; otherwise, its score is 0. Finally, we give a scale value for the FFI from 0 to 3, where a high value means the bank is maintaining healthier financial flexibility.[12]

3.2.2 | Corporate governance variables

We use several characteristics related to the board of directors (BOD), risk committee (RCE), and SSB monitoring

mechanisms as our primary explanatory variables to measure a bank's governance effectiveness. Table 3 introduces all of our variables (main and control). We measure BOD structure effects using two indicators: BOD size (*BODSIZE)* and BOD independence (*BODIND)*. The risk committee dummy (RCE) captures the existence of a separate risk committee. SSB effectiveness is captured using SSB size (*SSBSIZE)*, the percentage of members with a financial qualification on SSB (*SSBfinq)*, and the percentage of members with more than two memberships on other banks (*SSBbusy)*.

3.2.3 | Controls

We control for the relevant bank-specific variables that may drive the empirical analysis. We include insider ownership (*MANOWN)* to control equity agency costs. Higher insider ownership may give executives the power to exploit the firm's financial resources, thus affecting the FF. Bank age (*AGE)* may affect a bank's ability to maintain or issue funds, thus affecting its financial flexibility. Unconstrained banks are usually mature, which allows them to hold less cash and depend more on their ability to borrow from external markets. We also include bank size (*LOGTA)*. Small banks are usually financially constrained, which motivates them to maintain more cash. Faulkender and Wang (2006) and Pinkowitz et al. (2006) find that cash holdings are more valuable for firms that have higher estimated external financing costs (financially constrained firms).

Furthermore, bank size plays a crucial role when structuring risk strategies. For example, large banks might be

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[12]We require the availability of all our FFI's proxies to have a value. We, therefore, remove any missing values in the FFI components.

TABLE 3 Variable definitions.

Name	Abbreviation	Description
Panel A: Dependent variable		
Financial flexibility index	FFI	An ordinary variable, ranging from 0 to 3, indicating different levels of financial flexibility (see Table 2).
Panel B: Corporate governance		
Board of directors size	BODSIZE	The total number of board of directors' members.
Board independence	BODIND	Percentage of independent non-executive directors on the board of directors.
Risk committee existing	RCE	Dummy variable take value of 1 if the bank has dedicated risk committee and 0 otherwise
Shari'ah supervisory board size	SSBSIZE	The total numbers of Shari'ah advisors on the board.
Shari'ah supervisory board financial qualification	SSBFinq	Percentage of member who has financial qualification on the SSBs.
Shari'ah supervisory board busy	SSBbusy	Percentage of member who has more than two directorship on other SSBs.
Panel C: Bank and country level characteristics		
Insider ownership	MANOWN	Percentage of shares held by executive directors to total number of shares
Bank age	AGE	The difference between the sample year and the year in which the bank was established.
Bank size	LOGTA	Natural logarithm of total assets of a bank.
Bank growth opportunities	GROWTHOPP	Tobins' Q (Equity MV plus liability BV divided by asset BV).
Performance	ROAA	ROAA is return on average assets. RISK is the bank return volatility measured by the SD of return on average assets
Bank return volatility	RISK	The standard deviation of Return on Average Assets
Bank tier 1 capital ratio	TIER1	Core capital/Risk weighted assets
Cost of income	COSTEFF	The bank cost efficiency measured by cost/net income
Islamic bank	ISLAMIC	Dummy variable: 1 if the bank is Islamic, 0 otherwise.
GDP per capita	LOGGDPPC	Natural logarithm of Gross Domestic Products (GDP) per capita.
Country corporate governance	G-Index	country corporate governance quality measured by six indicators
Inflation rate	INFL	Annual rate of inflation.
Hirschman–Herfindahl index	HHI	The Hirschman–Herfindahl Index measures bank market concentration. HHI is calculated as the square sum of the ratio of total assets of each bank-year to total assets of all banks each year. It has a value between zero and one. Higher HHI shows higher bank concentration.
Domestic interest rate	DIR	Deposit interest rate provided by the World Bank website; for years and countries with missing observations, the data are obtained from the central bank websites.
Legal system	LEGAL	0 for countries not using Shari'ah law to define their legal system, 1 for countries combining both Shari'ah law and other legal systems, 2 if the legal system is based exclusively on Shari'ah law.

riskier because of the exploitation of too-big-to-fail safety net subsidies. Both age and size can also control for a bank's level of complexity, as they can affect the bank's BOD (Boone et al., 2007; Coles et al., 2008; Linck et al., 2008).[13] Profitability (*ROAA*) plays a crucial role in affecting the

banks' funding and cash holding policies. We also control for banks' growth opportunities (*GROWTHOPP*) and banks' return volatility (*RISK*). The Bank Tier 1 Capital Ratio (*TIER1*) has a real effect on a bank's funding structure and is considered an essential indicator of a bank's financial strength. Cost efficiency (*COSTEFF*) controls the bank's ability to maintain a strong financial flexibility position, as higher inefficiency costs indicate a weak bank management system, increasing the incentive to take greater risks (Kwan & Eisenbeis, 1997). Finally, we use an *ISLAMIC* dummy variable.

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[13]Firm leverage is also considered a complexity level determinant. However, we did not include it in our tests due to a multicollinearity problem with Tier 1. We included the leverage ratio in our complexity analysis.

TABLE 4 Descriptive statistics for regression variables.

Variables	Obs	Mean	Median	SD	IBs sample Mean	CBs sample Mean	Two-sample *t*-test
Panel A: Dependent variables							
FFI	748	1.390	1.349	0.653	1.344	1.426	1.719
FFI2	697	4.002	4.000	1.324	4.001	4.002	0.013
FF-LA	749	0.495	0.485	0.404	0.492	0.497	0.158
Panel B: Corporate governance							
BODSIZE	734	9.976	10.00	1.840	9.638	10.22	4.340***
BODIND	760	0.365	0.363	0.239	0.390	0.346	−2.539***
RCE	704	0.884	1.00	0.239	0.865	0.898	1.351
SSBSIZE	676	1.886	0.00	2.111			
SSBBusy	615	0.342	0.00	0.419			
SSBfinq	652	0.131	0.00	0.237			
Panel C: Bank and country level characteristics							
MANOWN	741	0.037	0.007	0.071	0.045	0.031	−2.578***
AGE	739	35.53	37.00	17.37	25.67	43.02	15.67***
LOGTA	758	15.63	15.79	1.098	15.55	15.70	1.842*
GROWTHOPP	720	1.050	1.032	0.091	1.056	1.044	−1.824*
ROAA	746	1.197	1.223	0.925	0.960	1.377	6.319***
RISK	750	0.609	0.358	0.716	0.882	0.402	−9.706***
TIER1	732	17.70	16.82	6.205	19.660	16.227	−7.851***
COSTEFF	743	47.81	45.74	16.19	52.78	44.04	−7.640***
ISLAMIC	760	0.431	0.000	0.495	—	—	—
LOGGDPPC	760	4.028	3.195	3.653	—	—	—
CGI	760	0.208	0.074	0.549	—	—	—
INFL	741	3.024	2.837	2.690	—	—	—
HHI	760	0.204	0.200	0.087	—	—	—
DIR	756	2.959	2.206	1.865	—	—	—
LEGAL	759	1.000	1.000	0.358	—	—	—

Note: The table presents descriptive statistics of all variables used in the regression models for the full sample and each bank type. FFI is our financial flexibility index: An ordinary variable [0, 3], indicating different levels of financial flexibility (see Table 2). FFI2 and FF-LA are other proxies for banks financial flexibility FFI2 is an ordinary variable [0, 8], indicating different levels of financial flexibility (see Table 2). FF-LA takes value of 1 if their measure is higher than the mean value of the full sample for the same year, otherwise 0. See Table 3 for variables definitions. We also report on the paired sample mean test (*t*-test).
*p < 0.1; ***p < 0.01 (two-tailed test).

We also use country-specific variables to control for differences in economic development and growth. These include (a) GDP per capita (*LOGGDPPC*), (b) governance effectiveness (*CGI*), (c) the annual rate of inflation (*INFL*), (d) the Herfindahl–Hirschman Index (*HHI*) concentration ratio, (e) the domestic interest rate (DIR), and (f) the legal system (*LEGAL*). The country governance index was produced by Kaufmann et al. (2009). The *CGI* index includes an average of the six governance indicators: voice and accountability, political stability, government effectiveness, regulatory quality, the rule of law, and corruption control.

3.3 | Methods

We estimate the following model:

$$FFI_{i,j,t} = a_0 + a_1 * CG_{i,j,t} + b_1 RCE_{i,j,t} + b_2 SSB_{i,j,t} + \gamma * X_{i,j,t} + \delta * ME_{j,t} + \varepsilon_{i,j,t}$$

(1)

Where for each bank *i*, country *j* and time *t*, FFI refers to the financial flexibility index; CG is a matrix of the corporate governance indicators; RCE is a proxy of the

TABLE 5 Pearson pairwise correlation matrix: full sample.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
FFI (1)	1																		
BODSIZE (2)	0.154*	1																	
BODIND (3)	0.021	−0.084*	1																
RCE (4)	0.024	0.049	−0.076*	1															
MANOWN (5)	−0.009	0.056	0.130*	−0.06	1														
AGE (6)	0.124*	0.341*	−0.281*	0.102*	−0.151*	1													
LOGTA (7)	0.092*	−0.155*	−0.025	−0.137*	−0.187*	0.202*	1												
GROWTHOPP (8)	0.090*	−0.154*	−0.122*	−0.225*	0.097*	−0.119*	0.348*	1											
ROAA (9)	0.115*	0.085*	−0.149*	−0.023	−0.016	0.137*	0.395*	0.256*	1										
RISK (10)	−0.250*	−0.197*	0.186*	−0.121*	0.022	−0.328*	−0.235*	−0.032	−0.531*	1									
TIER1 (11)	0.056	−0.014	0.090*	−0.057	0.102*	−0.237*	−0.444*	0.004	−0.264*	0.251*	1								
COSTEFF (12)	−0.073*	0.033	0.158*	0.104*	0.211*	−0.239*	−0.600*	−0.315*	−0.705*	0.399*	0.453*	1							
Islamic (13)	−0.062*	−0.158*	0.091*	−0.051	0.093*	−0.494*	−0.066*	0.061*	−0.223*	0.332*	0.274*	0.267*	1						
LOGGDPPC (14)	0.086*	−0.103*	−0.005	0.079*	0.025	−0.141*	−0.004	0.092*	0.302*	−0.114*	0.087*	−0.069*	0.015	1					
GOVERNMENT-E (15)	−0.007	−0.314*	0.255*	−0.104*	−0.149*	−0.221*	0.235*	0.021	0.047	0.188*	0.027	−0.173*	0.086*	0.166*	1				
INFL (16)	−0.183*	0.120*	−0.229*	−0.060	0.019	0.077*	−0.031	0.075*	0.049	−0.067*	−0.162*	−0.090*	0.011	0.086*	−0.286*	1			
HHI (17)	−0.004	0.051	−0.058	0.199*	0.178*	−0.056	−0.505*	0.021	0.038	−0.102*	0.264*	0.176*	−0.051	0.011	−0.573*	0.259*	1		
DIR (18)	0.033	0.297*	−0.184*	0.134*	−0.161*	0.360*	0.058	−0.122*	0.189*	−0.309*	−0.297*	−0.240*	−0.368*	−0.127*	−0.520*	−0.144*	0.436*	1	
LEGAL (19)	−0.176*	−0.092*	0.112*	−0.156*	0.389*	−0.345*	−0.026	0.286*	0.091*	0.163*	0.212*	0.081*	0.358*	0.036	0.119*	0.157*	0.047	−0.476*	1

*p < 0.1.

TABLE 6 Univariate comparison of high versus low FF of banks.

	Full sample		
Variable	High FF	Low FF	Two sample *t*-test
FFI2	4.624	3.379	−14.67***
FF-LA	0.661	0.328	−12.43***
BODSIZE	10.30	9.636	−4.96***
BODIND	0.361	0.369	0.461
RCE	0.903	0.865	−1.599
SSBSIZE	4.258	3.985	−0.87
MANOWN	0.042	0.032	−1.862*
AGE	38.252	32.825	−4.35***
LOGTA	15.70	15.57	−1.62
GROWTHOPP	1.055	1.044	−1.67*
ROAA	1.385	1.006	−5.71***
RISK	0.414	0.804	7.79***
TIER1	18.342	17.076	−282*
COSTEFF	46.35	49.28	2.500**
ISLAMIC	0.402	0.460	1.611

Note: The table presents comparison analysis of all variables used in all the regression models for the full sample of high and low FF bank. FFI2 and FF-LA are other proxies for banks financial flexibility FFI2 is an ordinary variable [0, 8], indicating different levels of financial flexibility (see Table 2). FF-LA takes value of 1 if their measure is higher than the mean value of the full sample for the same year, otherwise 0. See Table 3 for variables definitions.
*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

dedicated Risk Committee; SSB is a matrix of the SSB indicators; X is a matrix of bank-level control variables; M is a matrix of country-level macroeconomic variables; ε is the error term; α_0 is the constant; and α, β, γ, and δ are the vectors of coefficient estimates.

We use a pooled ordinary least squares (OLSs) model as our baseline method with robust standard errors to control for potential heteroskedasticity problems. In addition to using OLS, we use an ordinal logit formulation for our second regression to account for the dependent variable's ordinal nature and provide a powerful specification check. We also re-estimate our model for robustness checking, using the lagged approach for independent and bank-specific control variables to control endogeneity (reverse causality). To further control endogeneity problems, we re-estimate our model using the dynamic panel estimation method, generalized methods of moments (GMM). This technique addresses endogeneity problems (i.e., reverse causality, measurement error in the repressor, and omitted variable bias). Also, for robustness, we estimate an alternative financial flexibility binary variable, the ratio of liquid assets to total assets (FF-LA), estimated using a probit model.

4 | RESULTS AND DISCUSSION

In this section, we start by discussing the descriptive statistics of the sample. We then show that banks' financial flexibility increases with board effectiveness. We further show that board effectiveness manifests differently for conventional and Islamic banks. Risk governance mechanisms have a unilateral positive effect on banks' financial flexibility, and Shari'ah governance mechanisms are associated with stronger financial flexibility for Islamic banks. We finally show that our results are robust to alternative specifications and robustness tests that account for possible endogeneity problems.

4.1 | Descriptive statistics

Table 4 presents the descriptive statistics of the variables. In particular, Table 4 reports the mean and distributional characteristics of all variables for the full sample and each subsample of the banks clustered according to the bank type.

The FFI mean values for Islamic and conventional banks are 1.34 and 1.42, respectively. Unconditionally, there is no significant difference in financial flexibility between conventional and Islamic banks. Islamic banks have a higher percentage of independent directors than conventional banks, whereas conventional banks have more directors on their boards than Islamic banks. The two-sample *t*-test analysis shows a significant difference between Islamic banks and conventional banks for BODSIZE ($p < 0.01$) and BODIND ($p < 0.01$). The mean number of Shari'ah advisors on the board is almost 2. However, only 13% of the SSB members have a financial qualification, whereas 34% hold more than one SSB directorship. Further, Islamic banks tend to be younger, smaller in size, have lower profitability, higher volatility, a higher Tier 1 ratio, and are less efficient at managing their costs.

Table 5 presents the correlation coefficients among the variables of interest. Banks with stronger financial flexibility tend to have more populated boards. Further, banks with a greater proportion of independent members on the board tend not to have an independent risk committee. The number of independent board members is not statistically significant, and a larger board size is associated with a smaller number of independent members on the board.

Table 6 provides a univariate comparison of the FFI values between the high and low financial flexibilities of all banks. Banks with high financial flexibility tend to have more board members. More mature banks with greater growth opportunities and higher profitability tend to have higher financial flexibility ratios. Banks with

TABLE 7 Regression results: CG and FF.

	Panel A: Full sample		Panel B: IBs		Panel C: CBs	
	(1)	(2)	(3)	(4)	(5)	(6)
Variables	OLS	Ologit	OLS	Ologit	OLS	Ologit
BODSIZE	0.052***	0.176***	−0.055**	−0.123**	0.065***	0.205***
	(0.016)	(0.049)	(0.030)	(0.108)	(0.018)	(0.058)
BODIND	0.266**	0.621*	−0.106	−0.672	0.150	0.191
	(0.107)	(0.331)	(0.183)	(0.743)	(0.165)	(0.490)
RCE	0.229**	0.867*	0.236*	1.464*	0.282**	1.078*
	(0.110)	(0.461)	(0.154)	(0.761)	(0.139)	(0.610)
SSBSIZE			0.097**	0.340**		
			(0.042)	(0.154)		
SSBfinq			−0.166	−0.727		
			(0.147)	(0.487)		
SSBbusy			0.358**	1.204**		
			(0.159)	(0.551)		
MANOWN	0.456	2.787	−0.203	−0.950	−0.596	−1.552
	(0.445)	(1.827)	(0.589)	(2.880)	(0.699)	(3.039)
AGE	0.002*	0.011**	−0.011***	−0.039***	0.005***	0.018***
	(0.001)	(0.004)	(0.003)	(0.011)	(0.002)	(0.006)
LOGTA	−0.013	0.066	−0.100	−0.370	0.065	0.409
	(0.041)	(0.162)	(0.092)	(0.366)	(0.067)	(0.298)
GROWTHOPP	1.425***	3.845**	1.435***	5.739***	1.523*	4.914*
	(0.376)	(1.685)	(0.437)	(2.126)	(0.860)	(3.319)
ROAA	0.0445	0.316	−0.274***	−1.303***	0.135*	0.778**
	(0.0573)	(0.237)	(0.091)	(0.433)	(0.077)	(0.328)
RISK	−0.304***	−1.208***	−0.266***	−0.950***	−0.541***	−1.747***
	(0.058)	(0.303)	(0.063)	(0.296)	(0.135)	(0.483)
TIER1	0.015**	0.051**	0.025***	0.097**	0.010	0.048
	(0.006)	(0.025)	(0.007)	(0.03)	(0.010)	(0.044)
COSTEFF	0.001	0.013	−0.023***	−0.099***	0.002	0.005
	(0.003)	(0.015)	(0.005)	(0.026)	(0.005)	(0.024)
ISLAMIC	0.113**	0.492***				
	(0.056)	(0.165)				
LogGDP	−0.279***	−1.114***	−0.367***	−1.311***	−0.154**	−0.884***
	(0.056)	(0.217)	(0.098)	(0.369)	(0.077)	(0.319)
CGI	0.088*	0.271*	0.424***	2.115***	0.220*	1.236**
	(0.082)	(0.296)	(0.152)	(0.692)	(0.154)	(0.629)
INFL	−0.029*	−0.081	−0.001	0.111	−0.002	0.019
	(0.016)	(0.063)	(0.0316)	(0.134)	(0.024)	(0.102)
HHI	−1.763***	−6.554***	−0.771*	−0.525*	−0.866	−2.566
	(0.420)	(1.511)	(0.929)	(3.871)	(0.611)	(2.494)
DIR	−0.095***	−0.414***	−0.0973**	−0.427***	−0.149***	−0.757***
	(0.025)	(0.093)	(0.040)	(0.158)	(0.039)	(0.164)
LEGAL	−0.582***	−2.502***	0.298	1.742	−0.909***	−5.179***

(Continues)

TABLE 7 (Continued)

	Panel A: Full sample		Panel B: IBs		Panel C: CBs	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
	(0.114)	(0.447)	(0.241)	(1.017)	(0.221)	(1.027)
Constant	0.638	6.844*	6.364***	−18.56***	0.796	−2.336
	(0.906)	(3.530)	(1.493)	(5.529)	(1.380)	(5.624)
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	697	697	262	262	435	435
R-squared	0.234	0.075	0.374	0.109	0.414	0.161

Note: The table presents regression results for banks' governance structure and financial flexibility index (FFI) for all samples for the period 2009–2020. FFI is our financial flexibility index: An ordinary variable [0, 3], indicating different levels of financial flexibility (Table 2). See Table 3 for variables definitions. Models (1, 3 and 5) use FFI as the dependent variable and adopt robust pooled ordinary least squares (OLS) technique. Model (2, 4 and 6) use FFI dependent variables and adopt ordinally logit regression as robustness check to control for censored nature of the dependent variable. Heteroscedasticity-robust standard errors are in parentheses.

*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

higher risk volatility and less cost efficiency tend to have lower financial flexibility.

4.2 | Empirical tests

4.2.1 | Hypotheses testing

In Table 7, Panel A, we examine the relationship between board effectiveness and banks' financial flexibility for conventional and Islamic banks. Banks with a larger board size tend to have more financial flexibility. This aligns with the assertion that larger boards help CEOs make better decisions, therefore preserving the bank's sound financial position. This finding aligns with Abdelbadie and Salama (2019), who show that effective boards increase banks' financial stability. The results align with the findings of other studies (e.g., Caton et al., 2016; Islam, 2023), which show that effective corporate governance enhances firms' financial flexibility.

In Table 7, Panel B, we examine the effect of board effectiveness on Islamic banks. In Table 7, Panel C, we investigate the effect of board effectiveness on conventional banks' financial flexibility. As hypothesised in Hypothesis 1b, we expect bank governance characteristics to have a different effect on Islamic banks than conventional banks. Indeed, we show that conventional (Islamic) banks' financial flexibility is associated with a larger (smaller) board size and a higher (lower) proportion of outsider directors. In Table 7, Panel B, and Panel C, we show evidence that BODSIZE is negatively associated with Islamic banks' financial flexibility and positively with conventional banks. This finding aligns with Mollah and Zaman (2015) and Mollah, Skully, and

Liljeblom (2017) who find that larger boards in Islamic banks are associated with less board effectiveness. We assert that large boards are negatively associated with Islamic banks' financial flexibility as there is a general lack of *Shari'ah* experts and the board's greater incentive to take more risks. Further, the proportion of independent non-executive board members has a positive effect on conventional banks' financial flexibility and a negative effect on Islamic banks; however, this effect remains insignificant. This finding is consistent with resource dependence theory, supporting the notion that one board size and composition do not fit all.

We find evidence in favour of Hypothesis 2. Banks with a dedicated risk committee have stronger financial flexibility. The results are consistent across both subsamples using both estimation methods. Overall, these results suggest that having a stronger risk governance mechanism tends to reduce risk-taking, thereby increasing the bank's financial flexibility. This is consistent with Aljughaiman & Salama, 2019, who find that effective risk governance reduces bank risk-taking.

Table 7, Panel B, shows the effect of SSB size on Islamic banks' financial flexibility. Consistent with Hypothesis 3, Islamic banks' financial flexibility increases proportionally with SSB size. Mollah and Zaman (2015) also find similar results for SSBSIZE and Islamic banks' performances when Shari'ah advisors have supervisory roles. Furthermore, the results suggest that board members with more than a directorship on SSBs enhance the Islamic banks' financial flexibility. This finding aligns with reputational theory, which suggests that members with more directorships have greater expertise and stronger connections, bringing more external sources to the firm. SSB's additional governance layer is crucial in

TABLE 8 Robustness check: relationship between banks' governance and banks' financial flexibility after control for endogeneity using lag and GMM.

	Lag approach			GMM approach		
	(1)	(2)	(3)	(4)	(5)	(6)
Variables	Full	IBs	CBs	Full	IBs	CBs
FFI (t–1)				0.314***	−0.143	0.270***
				(0.031)	(0.212)	(0.028)
BODSIZE$_{t-1}$	0.058***	−0.053*	0.067***	0.059**	−0.261*	0.071***
	(0.016)	(0.031)	(0.019)	(0.026)	(0.143)	(0.021)
BODIND$_{t-1}$	0.251**	−0.154	0.163	0.320*	−1.440	0.042
	(0.111)	(0.183)	(0.162)	(0.170)	(1.474)	(0.199)
RCE$_{t-1}$	0.259**	0.323*	0.392***	0.111*	0.923*	0.383*
	(0.115)	(0.176)	(0.147)	(0.120)	(0.558)	(0.196)
SSBSIZE$_{t-1}$		0.105**			0.418*	
		(0.049)			(0.240)	
SSBfinq $_{t-1}$		−0.258			0.320	
		(0.157)			(1.953)	
SSBbusy$_{t-1}$		0.352**			0.007*	
		(0.170)			(2.287)	
MANOWN	0.515	−0.237	−0.494	0.967*	6.172	3.216
	(0.482)	(0.652)	(0.792)	(0.492)	(4.503)	(2.956)
AGE	0.002	−0.011***	0.004**	0.020**	−0.035	0.011***
	(0.001)	(0.003)	(0.002)	(0.008)	(0.036)	(0.003)
LOGTA	−0.040	−0.160	0.074	0.201**	1.127*	0.132
	(0.045)	(0.102)	(0.074)	(0.093)	(0.582)	(0.140)
GROWTHOPP	1.380***	1.365***	2.040**	1.554***	2.429	2.890**
	(0.404)	(0.453)	(0.955)	(0.338)	(1.448)	(1.387)
ROAA	0.042	−0.260**	0.094	−0.126	−0.261	−0.054
	(0.067)	(0.105)	(0.084)	(0.110)	(0.187)	(0.143)
RISK	−0.365***	−0.311***	−0.483***	−0.259***	−0.102	−0.588***
	(0.070)	(0.081)	(0.146)	(0.066)	(0.178)	(0.117)
TIER1	0.017**	0.025***	0.013	0.024***	0.149*	−0.004
	(0.006)	(0.008)	(0.011)	(0.007)	(0.075)	(0.016)
COSTEFF	−0.001	−0.026***	0.001	−0.006	−0.058**	0.003
	(0.004)	(0.005)	(0.006)	(0.004)	(0.027)	(0.009)
LogGDP	−0.305***	−0.361***	−0.213**	0.264	−1.977**	−0.072
	(0.064)	(0.102)	(0.095)	(0.167)	(0.913)	(0.126)
CGI	−0.113	0.341**	0.302*	−0.414	−0.834	0.121
	(0.084)	(0.163)	(0.164)	(0.280)	(0.529)	(0.278)
INFL	−0.036*	−0.025	0.004	0.021	0.162	−0.019
	(0.019)	(0.037)	(0.028)	(0.020)	(0.106)	(0.027)
HHI	−2.081***	−1.507	−0.963	0.716	−13.46*	−1.211
	(0.461)	(1.081)	(0.676)	(1.314)	(7.186)	(3.242)
DIR	−0.098***	−0.117**	−0.160***	−0.120	−1.216*	−0.126
	(0.0279)	(0.046)	(0.047)	(0.094)	(0.593)	(0.119)

(Continues)

TABLE 8   (Continued)

	Lag approach			GMM approach		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
LEGAL	−0.548***	0.302	−1.002***	−0.673***	−5.573**	−0.408
	(0.128)	(0.270)	(0.256)	(0.188)	(2.314)	(0.325)
ISLAMIC	0.131**			0.894**		
	(0.057)			(0.366)		
Constant	1.060	7.796***	0.407	−4.799***	14.25	−3.793
	(0.960)	(1.671)	(1.589)	(1.542)	(12.62)	(3.067)
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
Countries Effects	Yes	Yes	Yes	Yes	Yes	Yes
AR (1) test (p-value)				0.000	0.008	0.000
AR (2) test (p-value)				0.335	0.728	0.685
Sargan test of over-identification (p-value)				0.269	0.206	0.184
Diff-in-Sargan test of exogeneity (p-value)				0.862	0.996	0.397
Observations	635	240	373	650	244	381
R-squared	0.247	0.402	0.419			

Note: The table presents regression results for banks' governance structure and financial flexibility index (FFI) for all samples for the period 2009–2020 using lag and GMM approaches to control for endengunity problem. See Table 3 for variables definitions. Heteroscedasticity-robust standard errors are in parentheses.
*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

assuring investors' and depositors' interests, enhancing client trust in banks, and increasing financial flexibility. Elamer et al. (2020) find that SSBs can improve operational risk disclosures.

4.2.2 | Control variables

Below, we discuss the results for the control variables, separately for conventional and Islamic banks. Age and profitability are negatively and significantly associated with Islamic banks' financial flexibility but not with conventional banks. Mollah, Hassan, et al. (2017) show that higher return volatility negatively affects a bank's financial stability. In line with this finding, we show that bank return volatility is negatively associated with Islamic and conventional banks' financial flexibility. The negative effect of return volatility on financial stability is ultimately manifested in the bank's financial flexibility. Growth opportunities have a positive effect on the financial flexibility of both conventional banks and Islamic banks. The level of the Tier 1 ratio affects the financial flexibility of Islamic banks but not conventional banks. As expected, cost efficiency is negatively associated with weaker financial flexibility, although only Islamic banks' significance remains.

The IBs' dummy variable (ISLAMIC) has a significant positive relationship with FFI across all the estimation models. This suggests that IBs have a stronger financial flexibility position than CBs. IBs are more prone to liquidity risks, making them reserve higher liquidity and more stable funding due to their restricted access to external financing. The CGI positively affects the banks' FFI across all samples, assuring that countries with more government control support the advising and monitoring systems, thus enhancing the banks' financial flexibility. The findings also demonstrate that country-wide factors that take into account variations in economic development and growth have a significant impact on Islamic banks' financial flexibility. Financial flexibility decreases with the GDP rate, the HHI concentration ratio, and the domestic interest rate. Interestingly, we find that the legal system has a negative effect on conventional banks' financial flexibility, indicating that conventional banks operating in countries with *Shari'ah* legal systems suffer from lower financial flexibility levels.

4.3 | Robustness checks

4.3.1 | Endogeneity

We control for potential simultanety and endogeneity problems that may have affected our results. First, we control for a potential reverse causality between corporate governance mechanisms and financial flexibility positions. We assume that BODSIZE, BODIND, RCE,

TABLE 9 Robustness check: Regression results using another FF measure.

	Probit approach		
	(1)	**(2)**	**(3)**
Variables	Full	IBs	CBs
BODSIZE	0.020**	−0.042**	0.032***
	(0.009)	(0.018)	(0.011)
BODIND	−0.067	−0.076	−0.304
	(0.060)	(0.124)	(0.085)
RCE	0.153**	0.043*	0.199**
	(0.064)	(0.110)	(0.082)
SSBSIZE		0.070**	
		(0.031)	
SSBfinq		−0.059	
		(0.096)	
SSBbusy		0.175*	
		(0.107)	
MANOWN	0.522*	−0.084	0.411
	(0.271)	(0.376)	(0.452)
AGE	0.001*	0.001	0.001
	(0.001)	(0.002)	(0.001)
LOGTA	0.029	−0.171***	0.166***
	(0.025)	(0.055)	(0.034)
GROWTHOPP	0.004	0.767***	−1.875***
	(0.234)	(0.268)	(0.446)
ROAA	−0.067**	−0.071	−0.055
	(0.033)	(0.057)	(0.047)
RISK	−0.069**	−0.148***	−0.041
	(0.034)	(0.043)	(0.089)
TIER1	0.008**	0.006	0.012*
	(0.003)	(0.005)	(0.005)
COSTEFF	−0.003	−0.008**	−0.006*
	(0.002)	(0.003)	(0.003)
LogGDP	−0.123***	−0.119*	−0.079*
	(0.036)	(0.063)	(0.044)
CGI	−0.293***	−0.103	−0.235***
	(0.049)	(0.104)	(0.090)
INFL	−0.051***	−0.038*	−0.046***
	(0.010)	(0.021)	(0.014)
HHI	0.169	−0.828	0.816**
	(0.249)	(0.596)	(0.401)
DIR	0.007	−0.0416	−0.0111
	(0.014)	(0.031)	(0.028)
LEGAL	−0.116*	0.039	−0.038
	(0.062)	(0.154)	(0.121)
			(Continues)

TABLE 9 (Continued)

	Probit approach		
	(1)	**(2)**	**(3)**
ISLAMIC	0.124***		
	(0.036)		
Constant	0.163	4.539***	0.637
	(0.511)	(0.930)	(0.823)
Year effects	Yes	Yes	Yes
Country effects	Yes	Yes	Yes
Observations	697	262	409
R^2/Pseudo	0.293	0.339	0.462

Note: The table presents regression results for banks' governance structure and Financial Flexibility using another FF proxy for all samples for the period 2009–2020. See Table 3 for variables definitions. Heteroscedasticity-robust standard errors are in parentheses.
*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

SSSIZE, SSBfinq and SSBbusy are endogenous variables that might affect our results. As a result, we use the lagged approach to account for reverse causality that our explanatory variables may have caused. We also use a dynamic panel GMM estimator to alleviate further endogeneity problems (see Wintoki et al., 2012). Therefore, we also control for a potential reverse causality between the bank-specific variables and financial flexibility, assuming that all bank-specific control variables are determined endogenously.[14] The results are presented in Table 8.

Table 8 regresses FFI against the one-year lagged values of board effectiveness measures, the dedicated risk committee dummy, and the SSB monitoring mechanisms. We estimate the results for the full sample and separately for Islamic and conventional banks. In columns 4–6, we apply the GMM method to control for possible endogeneity concerns.

For board effectiveness, the results remain unchanged. The autocorrelation tests of orders one and two, the Sargan test of over-identification, and the difference-Sargan test confirm possible endogeneity bias and confirm our instruments' validity.

4.3.2 | Further analysis

As a final robustness check, we use alternative measures of financial flexibility. We construct the liquid-to-total assets ratio as an alternative measure of financial flexibility (FF-LA). We create a dummy variable for this proxy,

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[14]We exclude bank age from our endogeneity assumptions, as several previous studies consider firm age as an exogenous variable with risk-taking.

taking a value of 1 if the value of that proxy was higher than the mean value of the full sample in the same year and 0 otherwise. We use the Probit model to control for the binary dependent variable (FF-LA).

We present the results of the alternative specifications in Table 9. The baseline results hold across all our main explanatory variables. Board size has a negative (positive) effect on Islamic (conventional) banks' financial flexibility. The risk committee dummy is positive and significant for conventional and Islamic banks. SSB size and busy SSBs enhance Islamic banks' financial flexibility.

5 | CONCLUSION

We investigate the relationship between corporate governance structures and financial flexibility for conventional and Islamic banks in the Middle East and North Africa (MENA) region. Financial flexibility refers to a firm's ability to undertake profit-maximising projects and respond efficiently to cash flow changes. While corporate governance refers to the rules and practices by which a firm is controlled, Shari'ah governance refers to the rules and practices compliant with Shari'ah law.

We construct a novel FFI for the banking sector and show the effect of banks' governance structures on their financial flexibility. We hypothesise that (i) effective corporate governance mechanisms increase the banks' financial flexibility positions and (ii) effective corporate governance manifests differently for conventional banks and Islamic banks.

We show that corporate governance significantly affects banks' financial flexibility. In line with our hypotheses regarding the direction of this relationship, we find that while board size positively affects conventional banks' financial flexibility, it negatively affects Islamic banks. Risk committee governance mechanisms overall enhance conventional and Islamic banks' financial flexibility. Finally, we show that SSB size and busy SSBs enhance Islamic banks' financial flexibility.

Islamic banks' main characteristics explain our findings: Shari'ah compliance risk and a lack of protection for stakeholders' rights. Our results provide insights into the role of Shari'ah governance in corporate governance structures. Overall, our results show that the efficacy of one-size-fits-all regulation that targets 'hard' policies, such as increasing capital and liquidity requirements for banks, can be enhanced by further implementing 'soft' policies targeting corporate governance mechanisms. This article contributes to the literature investigating the impact of corporate governance mechanisms on banks' financial flexibility. Further, we contribute to the nascent literature on Islamic and conventional banks by employing a richer set of governance characteristics.

Our results have important policy implications for regulators and shareholders. Given the strong association between corporate governance and risk governance structures with financial flexibility, regulators and shareholders should request transparent and multi-layered governance structures. However, Western corporate governance structures may also lead to suboptimal financial flexibility positions; therefore, we recommend that banking policies re-evaluate the impact of one-size-fits-all approaches to corporate governance while promoting 'soft policies' to banking regulation that are value-enhancing for the banking sector.

DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available from BankScope, Bloomberg, the banks' annual reports and the World Bank. Restrictions apply to the availability of these data, which were used under license for this study.

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